

EZ Switch 10/100

8-Port Fast Ethernet Switch

- ◆ 8 auto-MDI/MDI-X ports—connect to PCs or other switches or hubs
- ◆ One Gigabit port for high-speed uplink
- ◆ Plug and play—nothing to configure
- ◆ Auto-negotiation of speed and duplex mode
- ◆ Full-duplex support on all ports
- ◆ Half- and full-duplex flow control
- ◆ Desktop and rack mountable



EZ Switch 10/100 User Guide

From SMC's EZ line of low-cost workgroup LAN solutions

SMC®

Networks

6 Hughes

Irvine, CA 92618

Phone: (949) 707-2400

May 2001

Pub. # 150524-R01

Copyright

Information furnished by SMC Networks, Inc. (SMC) is believed to be accurate and reliable. However, no responsibility is assumed by SMC for its use, nor for any infringements of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of SMC. SMC reserves the right to change specifications at any time without notice.

Copyright © 2001 by
SMC Networks, Inc.
6 Hughes, Irvine, CA.
All rights reserved. Printed in Taiwan

Trademarks:

SMC is a registered trademark; and EZ Switch is a trademark of SMC Networks, Inc. Other product and company names are trademarks or registered trademarks of their respective holders.

Limited Warranty

Limited Warranty Statement: SMC Networks, Inc. ("SMC") warrants its products to be free from defects in workmanship and materials, under normal use and service, for the applicable warranty term. All SMC products carry a standard 90-day limited warranty from the date of purchase from SMC or its Authorized Reseller. SMC may, at its own discretion, repair or replace any product not operating as warranted with a similar or functionally equivalent product, during the applicable warranty term. SMC will endeavor to repair or replace any product returned under warranty within 30 days of receipt of the product.

The standard limited warranty can be upgraded to a Limited Lifetime* warranty by registering new products within 30 days of purchase from SMC or its Authorized Reseller. Registration can be accomplished via the enclosed product registration card or online via the SMC web site. Failure to register will not affect the standard limited warranty. The Limited Lifetime warranty covers a product during the Life of that Product, which is defined as the period of time during which the product is an "Active" SMC product. A product is considered to be "Active" while it is listed on the current SMC price list. As new technologies emerge, older technologies become obsolete and SMC will, at its discretion, replace an older product in its product line with one that incorporates these newer technologies. At that point, the obsolete product is discontinued and is no longer an "Active" SMC product. A list of discontinued products with their respective dates of discontinuance can be found at http://www.smc.com/smc/pages_html/support.html.

All products that are replaced become the property of SMC. Replacement products may be either new or reconditioned. Any replaced or repaired product carries either a 30-day limited warranty or the remainder of the initial warranty, whichever is longer. SMC is not responsible for any custom software or firmware, configuration information, or memory data of Customer contained in, stored on, or integrated with any products returned to SMC pursuant to any warranty. Products returned to SMC should have any customer-installed accessory or add-on components, such as expansion modules, removed prior to returning the product for replacement. SMC is not responsible for these items if they are returned with the product.

Customers must contact SMC for a Return Material Authorization number prior to returning any product to SMC. Proof of purchase may be required. Any product returned to SMC without a valid Return Material Authorization (RMA) number clearly marked on the outside of the package will be returned to customer at customer's expense. For warranty claims within North America, please call our toll-free customer support number at (800) 762-4968. Customers are responsible for all shipping charges from their facility to SMC. SMC is responsible for return shipping charges from SMC to customer.

WARRANTIES EXCLUSIVE: IF AN SMC PRODUCT DOES NOT OPERATE AS WARRANTED ABOVE, CUSTOMER'S SOLE REMEDY SHALL BE REPAIR OR REPLACEMENT OF THE PRODUCT IN QUESTION, AT SMC'S OPTION. THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND ARE IN LIEU

LIMITED WARRANTY

OF ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, EITHER IN FACT OR BY OPERATION OF LAW, STATUTORY OR OTHERWISE, INCLUDING WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. SMC NEITHER ASSUMES NOR AUTHORIZES ANY OTHER PERSON TO ASSUME FOR IT ANY OTHER LIABILITY IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE OR USE OF ITS PRODUCTS. SMC SHALL NOT BE LIABLE UNDER THIS WARRANTY IF ITS TESTING AND EXAMINATION DISCLOSE THE ALLEGED DEFECT IN THE PRODUCT DOES NOT EXIST OR WAS CAUSED BY CUSTOMER'S OR ANY THIRD PERSON'S MISUSE, NEGLIGENCE, IMPROPER INSTALLATION OR TESTING, UNAUTHORIZED ATTEMPTS TO REPAIR, OR ANY OTHER CAUSE BEYOND THE RANGE OF THE INTENDED USE, OR BY ACCIDENT, FIRE, LIGHTNING, OR OTHER HAZARD.

LIMITATION OF LIABILITY: IN NO EVENT, WHETHER BASED IN CONTRACT OR TORT (INCLUDING NEGLIGENCE), SHALL SMC BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL, OR PUNITIVE DAMAGES OF ANY KIND, OR FOR LOSS OF REVENUE, LOSS OF BUSINESS, OR OTHER FINANCIAL LOSS ARISING OUT OF OR IN CONNECTION WITH THE SALE, INSTALLATION, MAINTENANCE, USE, PERFORMANCE, FAILURE, OR INTERRUPTION OF ITS PRODUCTS, EVEN IF SMC OR ITS AUTHORIZED RESELLER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

SOME STATES DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES OR THE LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS, SO THE ABOVE LIMITATIONS AND EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS, WHICH MAY VARY FROM STATE TO STATE. NOTHING IN THIS WARRANTY SHALL BE TAKEN TO AFFECT YOUR STATUTORY RIGHTS.

* SMC will provide warranty service for one year following discontinuance from the active SMC price list. Under the limited lifetime warranty, internal and external power supplies, fans, and cables are covered by a standard one-year warranty from date of purchase.

SMC Networks, Inc.
6 Hughes
Irvine, CA 92618

COMPLIANCES

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual may cause harmful interference to radio communications. Its operation in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

EC Conformance Declaration - Class A

SMC contact for these products in Europe is:

SMC Networks Europe,
Edificio Conata II,
Calle Frutuós Gelabert 6-8, 2^a, 4^a,
08970 - Sant Joan Despí,
Barcelona, Spain.

This information technology equipment complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC, and carries the CE Mark accordingly. It conforms to the following specifications:

EMC: EN55024 (1998)/CISPR-22 (1995) Class A

IEC 61000-4-2 (1995)	4 kV CD, 8 kV AD
IEC 61000-4-3 (1995)	3 V/m
IEC 61000-4-4 (1995)	1.0 kV - (power line) 0.5 kV - (signal line)
IEC 61000-4-5 (1995)	2 kV - (line to line) 1 kV - (line to ground)
IEC 61000-4-6 (1995)	3 Vrms
IEC 61000-4-11 (1995)	Voltage dip >95% - 10 ms 30% - 500 ms 60% - 100 ms Voltage interruption >95% - 5000 ms

Industry Canada - Class A

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus as set out in the interference-causing equipment standard entitled "Digital Apparatus", ICES-003 of Industry Canada.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A prescrites dans la norme sur le matériel brouilleur: "Appareils Numériques", NMB-003 édictée par l'Industrie.

Safety Compliance

CSA/NRTL (C22.2.950, UL 1950)

EN 60950, (IEC 950)

Wichtige Sicherheitshinweise (Germany)

1. Bitte lesen Sie diese Hinweise sorgfältig durch.
2. Heben Sie diese Anleitung für den späteren Gebrauch auf.
3. Vor jedem Reinigen ist das Gerät vom Stromnetz zu trennen. Verwenden Sie keine Flüssigoder Aerosolreiniger. Am besten eignet sich ein angefeuchtetes Tuch zur Reinigung.
4. Die Netzanschlusßsteckdose soll nahe dem Gerät angebracht und leicht zugänglich sein.
5. Das Gerät ist vor Feuchtigkeit zu schützen.
6. Bei der Aufstellung des Gerätes ist auf sicheren Stand zu achten. Ein Kippen oder Fallen könnte Beschädigungen hervorrufen.
7. Die Belüftungsöffnungen dienen der Luftzirkulation, die das Gerät vor Überhitzung schützt. Sorgen Sie dafür, daß diese Öffnungen nicht abgedeckt werden.
8. Beachten Sie beim Anschluß an das Stromnetz die Anschlußwerte.
9. Verlegen Sie die Netzanschlusßleitung so, daß niemand darüber fallen kann. Es sollte auch nichts auf der Leitung abgestellt werden.
10. Alle Hinweise und Warnungen, die sich am Gerät befinden, sind zu beachten.
11. Wird das Gerät über einen längeren Zeitraum nicht benutzt, sollten Sie es vom Stromnetz trennen. Somit wird im Falle einer Überspannung eine Beschädigung vermieden.
12. Durch die Lüftungsöffnungen dürfen niemals Gegenstände oder Flüssigkeiten in das Gerät gelangen. Dies könnte einen Brand bzw. elektrischen Schlag auslösen.
13. Öffnen sie niemals das Gerät. Das Gerät darf aus Gründen der elektrischen Sicherheit nur von autorisiertem Servicepersonal geöffnet werden.
14. Wenn folgende Situationen auftreten ist das Gerät vom Stromnetz zu trennen und von einer qualifizierten Servicestelle zu überprüfen:
 - a. Netzkabel oder Netzstecker sind beschädigt.
 - b. Flüssigkeit ist in das Gerät eingedrungen.
 - c. Das Gerät war Feuchtigkeit ausgesetzt.
 - d. Wenn das Gerät nicht der Bedienungsanleitung entsprechend funktioniert oder Sie mit Hilfe dieser Anleitung keine Verbesserung erzielen.
 - e. Das Gerät ist gefallen und/oder das Gehäuse ist beschädigt.
 - f. Wenn das Gerät deutliche Anzeichen eines Defektes aufweist.
15. Zum Netzanschluß dieses Gerätes ist eine geprüfte Leitung zu verwenden. Für einen Nennstrom bis 6 A und einem Gerätegewicht größer 3 kg ist eine Leitung nicht leichter als H05VV-F, 3G, 0.75 mm² einzusetzen.

Der arbeitsplatzbezogene Schalldruckpegel nach DIN 45 635 Teil 1000 beträgt 70 dB(A) oder weniger.

TABLE OF CONTENTS

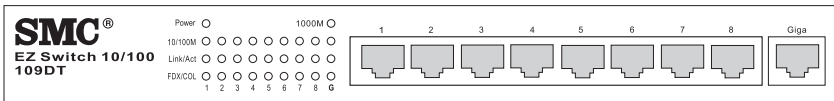
About the EZ Switch 10/100	1
Features and Benefits	2
Front Panel LEDs	3
Rear Panel	4
Installing the Switch	5
Equipment Checklist	5
Selecting a Site	5
Instructions	6
Positioning the Switch	6
Applying Power	6
RJ-45 10/100 Mbps Connections	7
Connecting to the Gigabit Uplink Port	7
Sample Applications	8
Troubleshooting	10
Cables	11
Cable Specifications	11
RJ-45 Connector Pin Assignments	12
10BASE-T/100BASE-TX Pin Assignments	12
1000BASE-T Pin Assignments	13
1000BASE-T Cable Requirements	14
Cable Testing for Existing Category 5 Cable	14
Adjusting Existing Category 5 Cabling to Run 1000BASE-T	15
Specifications	16

TABLE OF CONTENTS

ABOUT THE EZ SWITCH 10/100

The EZ Switch 10/100 SMC-EZ109DT is an 8-port Fast Ethernet switch with one Gigabit uplink port. The 10BASE-T/100BASE-TX ports deliver dedicated 10/100 Mbps links to each attached LAN segment. The Gigabit port operates at 100 and 1000 Mbps. Each port on the switch supports automatic MDI/MDI-X detection. This means that you can use either straight-through or crossover cables to connect to any other network device.

Auto-negotiation is used to select the optimal transmission speed and communication mode for each connection. With store-and-forward switching and flow control, maximum data integrity is always maintained, even under heavy loading. Easy installation and reliability make this plug-and-play switch an ideal choice for smooth Fast Ethernet integration.

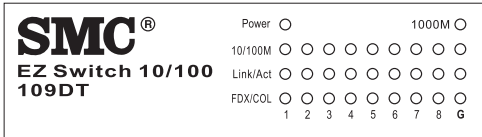


Features and Benefits

- ◆ Auto configuration for MDI/MDI-X cable connection allows connections to servers, workstations, hubs or switches to be made with straight-through cabling
- ◆ One Gigabit uplink port for high-speed uplink
- ◆ Auto-negotiation of half or full duplex on all ports
- ◆ IEEE 802.3 and 802.3u compliance ensures compatibility with standards-based hubs, switches and cards from any vendor
- ◆ Half- and full-duplex flow control prevents packets from being dropped under heavy loading
- ◆ “At-a-glance” LEDs for port and system status monitoring
- ◆ Desktop and rack mountable

Front Panel LEDs

The front panel of the switch provides status LEDs for “at-a-glance” system monitoring. The following table details the functions of the various indicators:



Port and System Status LEDs		
LED	Condition	Status
Power	On	The switch is receiving power.
Ports 1-8		
LINK/ ACT	Off	The port has not established any network connection.
	On	The port has established a valid network connection.
	Flashing	The port has established a valid network connection and traffic is passing through the port.
10/100M	Off	The port has established a valid network connection and communications have been set to 10 Mbps.
	On	The port has established a valid network connection and communications have been set to 100 Mbps.
FDX/ COL	On	The port is in full-duplex mode.
	Off	The port is in half-duplex mode.
	Flashing	Packet collision is occurring in half-duplex mode.

Port and System Status LEDs		
LED	Condition	Status
Gigabit Port		
LINK/ ACT	Off	The port has not established any network connection.
	On	The port has established a valid network connection.
	Flashing	The port has established a valid network connection and traffic is passing through the port.
10/100M	On	The port has established a valid network connection and communications have been set to 100 Mbps.
1000M	On	The port has established a valid network connection and communications have been set to 1000 Mbps.
FDX/ COL	On	The port is in full-duplex mode.
	Off	The port is in half-duplex mode.
	Flashing	Packet collision is occurring in half-duplex mode.

Rear Panel

The AC power receptacle is located on the rear panel of the switch.



INSTALLING THE SWITCH

Equipment Checklist

After unpacking the EZ Switch 10/100, check the contents of the box to be sure you have received the following components:

- EZ Switch 10/100 SMC-EZ109DT
- Appropriate AC power cable
- Four adhesive foot pads & rackmount kit
- SMC Warranty Registration Card
- This User Guide

Selecting a Site

Be sure to follow the site selection guidelines below when choosing a location:

- ◆ Select a suitable location for the switch:
 - It should be accessible for installing, cabling and maintaining the switch.
 - The temperature and humidity should be within the ranges listed in the specifications.
 - The status LEDs should be clearly visible.
 - There should be adequate space (approximately two inches) on all sides for proper air flow.
- ◆ Make sure twisted-pair cable is always routed away from power lines, fluorescent lighting fixtures and other sources of electrical interference such as radios and transmitters.

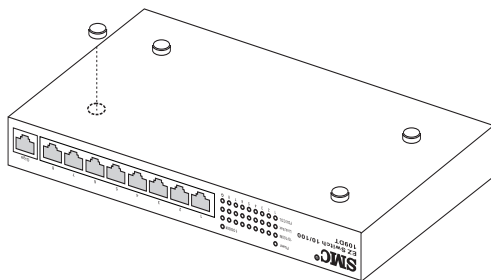
- ◆ Make sure that a properly grounded power outlet is within 2.44 meters (8 feet) of the switch and is powered from an independent circuit breaker. As with any equipment, using a filter or surge suppressor is recommended.

Instructions

Positioning the Switch

The EZ Switch 10/100 can be placed anywhere there is enough flat space, such as on a desktop or a shelf.

1. Attach the four adhesive feet to the bottom of the switch.



2. Place the first switch on a firm, flat surface where you want to install the stack
3. Repeat step 1 for each switch before stacking them. The rubber foot pads cushion the switch against shocks and vibrations, and provide space between each switch for ventilation.

Applying Power

Plug one end of the power cable into the power receptacle at the back of the switch, and the other end into an appropriate electrical outlet. Check the Power LED to be sure power is on.

Note: It is not necessary to power off the switch before connecting or disconnecting any UTP cables, as these actions *will not* disrupt the operation of other devices attached to the switch.

RJ-45 10/100 Mbps Connections

For twisted-pair devices, connect each PC to an RJ-45 port on the switch with a twisted-pair cable segment, maximum 100 meters (328 feet). Use Category 3, 4, or 5 cable for 10 Mbps connections, and Category 5 cable for all 100 Mbps connections.

Note: If an attached device does not support auto-negotiation, the data rate will be sensed automatically and the communication mode will default to half duplex.

Connecting to the Gigabit Uplink Port

The Gigabit uplink port operates at 1000 and 100 Mbps and supports IEEE 802.3x flow control. Auto-negotiation is used to select the optimal transmission speed and communication mode. Use Category 5 or 5e cable of maximum length 100m (328 feet). You should also test the cable installation for IEEE 802.3ab compliance. See “1000BASE-T Cable Requirements” on page 14.

Sample Applications

This switch segments your network, significantly increasing both bandwidth and throughput. Any port on the switch can be attached to a hub (a shared collision domain) or provide a dedicated link to a single network device (such as a workstation or server). When a port on the switch is connected to a hub (a 10 or 100 Mbps repeater), the bandwidth provided by that port is shared by all the devices connected to the attached hub. However, when a port is connected to an end node or to a device that breaks up the collision domain (e.g., another switch, bridge or router), the attached device has access to the full bandwidth provided by that port.

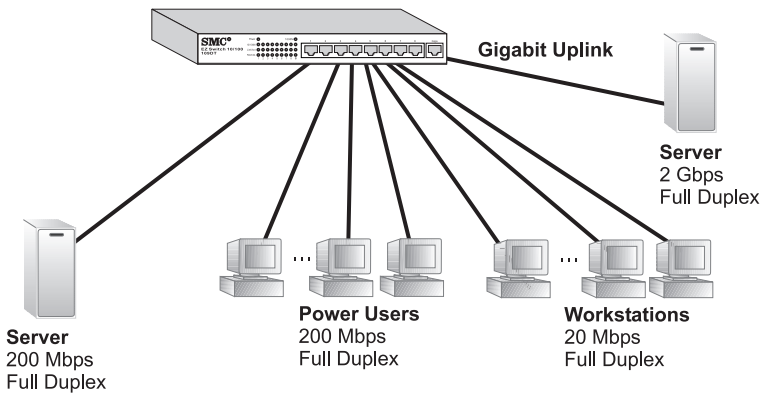
Bridging Functions - This switch provides fully transparent bridging functions. It automatically learns node addresses, that are subsequently used to filter and forward all traffic based on the destination address. When traffic passes between devices attached to the same shared collision domain, those packets are filtered from the switch. But when traffic must be passed between unique segments (i.e., different ports on the switch), the high-speed switching fabric forwards the packets at near zero latency.

Switching Functions - Store-and-forward switching is used to forward traffic to other ports. This scheme ensures data integrity and provides a clean data stream.

Flexible Configuration - This switch is not only designed to segment your network, but also to provide a wide range of options in setting up network connections. It can be used as a simple stand-alone switch; or be connected with standard repeater hubs, switches, or other network interconnection devices in various configurations.

Gigabit Uplink Port - You can use the Gigabit port to support applications such as high-speed file servers, or for connecting to a collapsed backbone switch.

In the figure below, the EZ Switch 10/100 is operating as a collapsed backbone for a small LAN. It is providing dedicated 20 Mbps full-duplex connections to workstations and 200 Mbps full-duplex connections to power users and servers. The Gigabit port is used to provide a 2 Gbps full-duplex link to a server.



TROUBLESHOOTING

1. Symptom

Power LED does not light after power on.

Probable Causes

Power outlet or power cord may be defective.

Possible Solutions

- Check for loose connections.
- Check the power outlet by using it for another device.
- Replace the power cord.

2. Symptom

Link LED does not light after connection is made.

Probable Causes

Switch port, network card or cable may be defective.

Possible Solutions

- Check that the switch and attached device are both powered on.
- Be sure the network cable is connected to both devices.
- Verify that Category 5 cable is used for 100 Mbps connections and that the length of any cable does not exceed 100 meters (328 feet).
- Check the network card and cable connections for defects.
- Replace the defective card or cable if necessary.

CABLES

CABLE SPECIFICATIONS

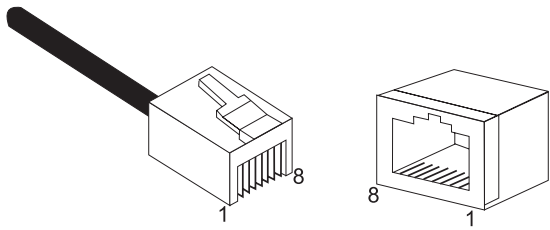
Maximum 10BASE-T, 100BASE-TX and 1000BASE-T Cable Length			
Cable	Type	Max. Length	Connector
10BASE-T	Cat. 3, 4, 5 100-ohm UTP	100 m (328 ft)	RJ-45
100BASE-TX	Cat. 5 100-ohm UTP	100 m (328 ft)	RJ-45
1000BASE-T	Cat. 5, 5e 100-ohm UTP	100 m (328 ft)	RJ-45

RJ-45 Connector Pin Assignments

Caution: **DO NOT** plug a phone jack connector into any RJ-45 port. Use only twisted-pair cables with RJ-45 connectors that conform with FCC standards.

10BASE-T/100BASE-TX Pin Assignments

An Ethernet or Fast Ethernet twisted-pair link segment requires two pairs of wires. Each wire pair is identified by two different colors. Each wire pair must be attached to the RJ-45 connector in a specific orientation detailed below.



Because all ports on this switch support automatic MDI/MDI-X operation, you can use straight-through cables for all network connections to PCs or servers, or to other switches or hubs. In straight-through cable, pins 1, 2, 3, and 6, at one end of the cable, are connected straight through to pins 1, 2, 3 and 6 at the other end of the cable. The table below shows the 1000BASE-T MDI and MDI-X port pinouts.

Pin	MDI-X Signal Name	MDI Signal Name
1	Receive Data plus (RD+)	Transmit Data plus (TD+)
2	Receive Data minus (RD-)	Transmit Data minus (TD-)
3	Transmit Data plus (TD+)	Receive Data plus (RD+)
6	Transmit Data minus (TD-)	Receive Data minus (RD-)
4, 5, 7, 8	Not used at 10/100 Mbps	Not used at 10/100 Mbps

1000BASE-T Pin Assignments

The table below shows the 1000BASE-T MDI and MDI-X port pinouts. These ports require that all four pairs of wires be connected. Note that for 1000BASE-T operation, all four pairs of wires are used for both transmit and receive.

Use 100-ohm Category 5 or 5e unshielded twisted-pair (UTP) or shielded twisted-pair (STP) cable for 1000BASE-T connections. Also be sure that the length of any twisted-pair connection does not exceed 100 meters (328 feet).

Pin	MDI Signal Name	MDI-X Signal Name
1	Transmit Data plus (TD1+)	Transmit Data plus (TD2+)
2	Receive Data minus (RD1-)	Receive Data minus (RD2-)
3	Transmit Data plus (TD2+)	Transmit Data plus (TD1+)
4	Transmit Data plus (TD3+)	Transmit Data plus (TD4+)
5	Receive Data minus (RD3-)	Receive Data minus (RD4-)
6	Receive Data minus (RD2-)	Receive Data minus (RD1-)
7	Transmit Data plus (TD4+)	Transmit Data plus (TD3+)
8	Receive Data minus (RD4-)	Receive Data minus (RD3-)

1000BASE-T Cable Requirements

All Category 5 UTP cables that are used for 100BASE-TX connections should also work for 1000BASE-T, providing that all four wire pairs are connected. However, it is recommended that for all critical connections, or any new cable installations, Category 5e (enhanced Category 5) cable should be used. The Category 5e specification includes test parameters that are only recommendations for Category 5.

Therefore, the first step in preparing existing Category 5 cabling for running 1000BASE-T is a simple test of the cable installation to be sure that it complies with the IEEE 802.3ab standards.

Cable Testing for Existing Category 5 Cable

Installed Category 5 cabling must pass tests for Attenuation, Near-End Crosstalk (NEXT), and Far-End Crosstalk (FEXT). This cable testing information is specified in the ANSI/TIA/EIA-TSB-67 standard. Additionally, cables must also pass test parameters for Return Loss and Equal-Level Far-End Crosstalk (ELFEXT). These tests are specified in the ANSI/TIA/EIA-TSB-95 Bulletin, "The Additional Transmission Performance Guidelines for 100 Ohm 4-Pair Category 5 Cabling."

Note that when testing your cable installation, be sure to include all patch cables between switches and end devices.

Adjusting Existing Category 5 Cabling to Run 1000BASE-T

If your existing Category 5 installation does not meet one of the test parameters for 1000BASE-T, there are basically three measures that can be applied to try and correct the problem:

1. Replace any Category 5 patch cables with high-performance Category 5e cables.
2. Reduce the number of connectors used in the link.
3. Reconnect some of the connectors in the link.

SPECIFICATIONS

Access Method

CSMA/CD

Ports

8 10BASE-T/100BASE-TX, with auto-negotiation

1 100BASE-TX/1000BASE-T with auto-negotiation

Network Interface

RJ-45: 100 ohm, UTP cable

10BASE-T - Categories 3, 4, or 5

100BASE-TX - Category 5

1000BASE-T - Category 5 or 5e

LEDs

System: Power

Ports 1-8: Link/Act, FDX/COL, 10/100M

Gigabit Port: Link/Act, FDX/COL, 100M, 1000M

Switching Method

Store-and-forward

MAC Address Table

4K total

Memory Buffer

2 MBytes per system

Filtering/Forwarding/Learning Rates

Full line rate

Flow Control

Full Duplex: IEEE 802.3x

Half Duplex: Back pressure

Size

250 x 117 x 37 mm (9.84 x 4.61 x 1.46 in.)

Weight

0.85 kg (1.87 lbs)

Temperature

Operating: 0 to 40 °C (32 to 104 °F)

Storage: -40 to 85 °C (-40 to 185 °F)

Humidity

5% to 95% non-condensing

Power Requirements

100 to 240 VAC ($\pm 10\%$) 50 to 60 Hz (± 3 Hz)

Power Consumption

15 Watts maximum @100 - 240 VAC

Heat Dissipation

51 BTU/hr maximum @100 - 240 VAC

Maximum Current

0.4 A @ 115 VAC

0.2 A @ 240 VAC

Standards

IEEE 802.3

IEEE 802.3u

IEEE 802.3ab

EMC/Safety Compliances

CE Mark

FCC Class A

EN55024 (CISPR 22) Class A

IEC 61000-4-2/3/4/5/6/11

CSA/NRTL (C22.2.950, UL 1950)

TÜV/GS (EN60950)

Warranty

Limited Lifetime

SPECIFICATIONS

FOR TECHNICAL SUPPORT, CALL:

From U.S.A. and Canada (24 hours, 7 days a week)
(800) SMC-4-YOU; (949) 707-2400; (949) 707-2460 (Fax)
From Europe (8:00 AM - 5:30 PM UK Greenwich Mean Time)
44 (0) 1188 748740; 44 (0) 1189 748741 (Fax)

INTERNET

E-mail address:

techsupport@smc.com
european.techsupport@smc-europe.com

Driver updates:

<http://www.smc.com/support.html>

World Wide Web:

<http://www.smc.com/>

FTP Site:

<ftp.smc.com>

FOR LITERATURE OR ADVERTISING RESPONSE, CALL:

U.S.A. and Canada:	(800) SMC-4-YOU;	Fax (949) 707-2460
Spain:	34-93-477-4920;	Fax 34-93-477-3774
UK:	44 (0) 1188 748700;	Fax 44 (0) 1189 748701
Southern Europe:	33 (1) 41.18.68.68;	Fax 33 (1) 41.18.68.69
Central/Eastern Europe:	49 (0) 89 92861-200;	Fax 49 (0) 89 92861-230
Nordic:	46 (8) 564 33145;	Fax 46 (8) 87 62 62
Middle East:	971-48818410;	Fax 971-48817993
South Africa:	27 (0) 11-3936491;	Fax 27 (0) 11-3936491
PRC:	86-10-6235-4958;	Fax 86-10-6235-4962
Taiwan:	886-2-2747-4780;	Fax 886-2-2747-9220
Asia Pacific:	(65) 238 6556;	Fax (65) 238 6466
Korea:	82-2-553-0860;	Fax 82-2-553-7202
Japan:	81-45-224-2332;	Fax 81-45-224-2331
Australia:	61-2-9416-0437;	Fax 61-2-9416-0474
India:	91-22-8204437;	Fax 91-22-8204443

SMC[®]

Networks

6 Hughes

Irvine, CA 92618

Phone: (949) 707-2400

Model Number: SMC-EZ109DT

Publication Number: 150524-301 E052001-R01